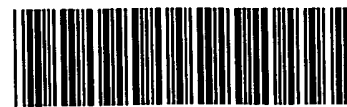


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Paper No. 14

6/18/02 DJS

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/520,538

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3 <110> APPLICANT: The Regents of the University of California
4   Wise, Arlene
6 <120> TITLE OF INVENTION: Detection Of Phenols Using Engineered Bacteria
8 <130> FILE REFERENCE: S-91,714
10 <140> CURRENT APPLICATION NUMBER: 09/520,538
11 <141> CURRENT FILING DATE: 2000-03-08
13 <160> NUMBER OF SEQ ID NOS: 17
15 <170> SOFTWARE: PatentIn version 3.0
17 <210> SEQ ID NO: 1
18 <211> LENGTH: 540
19 <212> TYPE: DNA
20 <213> ORGANISM: Pseudomonas sp. CF600
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25 atccacttcc agagcatgga aggcaagatc tggcttggcg aacagcgcat gctgttgctg      120
27 cagtcttcag cgatggccag ctttcgccgg gaaatggtea ataccctggg catcgaacgc      180
29 gccaaaggct tgttcctgcg ccattggttac cagtccggcc tgaaggatgc cgaactggcc      240
31 aggaagctga gaccgaatgc cagcgaagtc ggcattgttc tcgctgggccc gcagatgcat      300
33 tcaactcaagg gtctgggtaa ggtccgcccc accgagctcg atatcgacaa ggaatacggg      360
35 cgcttctatg ccgagatgga gtggatcgac tggttcgagg tggaaatctg ccagaccgac      420
37 ctggggcaga tgcaagaccc ggtgtgctgg actgtgctcg gctacgcctg cgcctattcc      480
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43 <211> LENGTH: 540
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45 <213> ORGANISM: Pseudomonas sp. CF600
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50 atccacttcc agagcatgga aggcaagatc tggcttggcg aacagcgcat gctgttgctg      120
52 cagttttcgg cgatggccag ctttcgccgg gaaatggtea ataccctggg catcgaacgc      180
54 gccaaaggct tgttcctgcg ccattggttac cagtccggcc tgaaggatgc cgaactggcc      240
56 aggaagctga gaccgaatgc cagcgaagtc ggcattgttc tcgctgggccc gcagatgcat      300
58 tcaactcaagg gtctgggtaa ggtccgcccc accgagctcg atatcgacaa ggaatacggg      360
60 cgcttctatg ccgagatgga gtggatcgac tggttcgagg tggaaatctg ccagaccgac      420
62 ctggggcaga tgcaagaccc ggtgtgctgg actgtgctcg gctacgcctg cgcctattcc      480
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69 <212> TYPE: DNA
70 <213> ORGANISM: Pseudomonas sp. CF600
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75 atccacttcc agagcatgga aggcaagatc tggcttggcg aacaacgcac gctgttgctg      120

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79 gccaaagggct tgttcctgcg ccatgggttac cagtccggcc tgaaggatgc cgaactggcc 240
81 aggaagctga gaccgaatgc cagcgaagtc ggcatgttcc tcgctgggccc gcagatgcat 300
83 tcaactcaagg gtctggtcaa ggtccgcccc accgggctcg atatcgacaa ggaatacggg 360
85 cgctttctatg ccgagatgga gtggatcgac tggttcgagg tggaaatctg ccagaccgac 420
87 ctggggcaga tgcaagaccc ggtgtgctgg actgtgctcg gctacgcctg cgcctattcc 480
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102 cagttttcag cgatggccag ctttcgccg gaaatgggtca ataccctggg catcgaacgc 180
104 gccaaagggct tgttcctgcg ccatgggttac cagtccggcc tgaaggatgc cgaactggcc 240
106 aggaagctga gaccgaatgc cagcgaagtc ggcatgttcc tcgctgggccc gcagatgcat 300
108 tcaactcaagg gtctggtcaa ggtccgcccc accgagctcg atatcgacat ggaatacggg 360
110 cgctttctatg ccgagatgga gtggatcgac tggttcgagg tggaaatctg ccagaccgac 420
112 ctggggcaga tgcaagaccc ggtgtgctgg actgtgctcg gctacgcctg cgcctattcc 480
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119 <212> TYPE: DNA
120 <213> ORGANISM: Pseudomonas sp. CF600
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125 atccacttcc agagcatgga aggcaagatc tggcttggcg aacagcgcat gctgttgctg 120
127 cagttttcag cgatggccag ctttcgccg gaaatgggtca ataccctggg cgtcgaacgc 180
129 accaaagggct tgttcctgcg ccatgggttac cagtccggcc tgaaggatgc cgaactggcc 240
131 aggaagctga gaccgaatgc cagcgaagtc ggcatgttcc ttgctgggccc gcagatgcat 300
133 tcaactcaagg gtctggtcaa ggtccgcccc accgagctcg atatcgacaa ggaatacggg 360
135 cgctttctatg ccgagatgga gtggatcgac tggttcgagg tggaaatctg ccagaccgac 420
137 ctggggcaga tgcaagggccc ggtgtgctgg actgtgctcg gctacgcctg cgcctattcc 480
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145 <213> ORGANISM: Pseudomonas sp. CF600
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150 atccacttcc agagcatgga aggcaagatc tggcttggcg aacagcgcat gctgttgctg 120
152 cagttttcag cgatggccag cttccgccg gaaatgggtca ataccctggg catcgaacgc 180
154 gccaaagggct tgttcctgcg ccatgggttac cagtccggcc tgaaggatgc cgaactggcc 240
156 aggaagctga gaccgaatgc cagcgaagtc ggcatgttcc tcgctgggccc gcagatgcat 300
158 tcaactcaagg gtctggtcaa ggtccgcccc accgagctcg atatcggcag ggaatacggg 360
160 cgctttctatg ccgagatgga gtggatcgac tggttcgagg tggaaatctg ccagaccgac 420
162 ctggggcaga tgcaagaccc ggtgtgctgg actgtgctcg gctacgcctg cgcctattcc 480
164 tcggcgctca tgggcccggga aatcatcttc aaggaagtca gctgccgcgg ctgcggcggc 540

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167 &lt;210&gt; SEQ ID NO: 7

168 &lt;211&gt; LENGTH: 540

169 &lt;212&gt; TYPE: DNA

170 &lt;213&gt; ORGANISM: Pseudomonas sp. CF600

172 &lt;400&gt; SEQUENCE: 7

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175	atccacttcc	agagcatgga	aggcaagatc	tggttggcg	aacagcgcat	gctgttgctg	120
177	cagttttcag	cgatggccag	cttccgccgg	gaaatggtca	ataccctggg	catcgaacgc	180
179	gccaagggct	tgttcctgcg	ccatgggttac	cagtccggcc	tgaaggatgc	cgaactggcc	240
181	aggaagctga	gaccgaatgc	cagcgaagtc	ggcatgttcc	tcgctggggc	gcagatgcat	300
183	tactcaagg	gtctgggtcaa	ggtccgcccc	accgagctcg	atatcgacaa	ggaatacggg	360
185	cgcttctatg	ccgagatgga	gtggatcgac	tggttcgagg	tggaatctg	ccagaccgac	420
187	ccggggcaga	tgcaagaccc	ggtgtgctgg	actgtgctcg	gctacgcctg	cgctatttcc	480
189	tcggcggtca	tgggcccggga	aatcatcttc	aaggaagtca	gctgccggcg	ctgcggcggc	540

192 &lt;210&gt; SEQ ID NO: 8

193 &lt;211&gt; LENGTH: 180

194 &lt;212&gt; TYPE: PRT

195 &lt;213&gt; ORGANISM: Pseudomonas sp. CF600

197 &lt;400&gt; SEQUENCE: 8

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200	1				5					10					15	
202	Leu	Thr	Asn	Leu	Ile	His	Phe	Gln	Ser	Met	Glu	Gly	Lys	Ile	Trp	Leu
203				20					25					30		
205	Gly	Glu	Gln	Arg	Met	Leu	Leu	Leu	Gln	Ser	Ser	Ala	Met	Ala	Ser	Phe
206			35					40				45				
208	Arg	Arg	Glu	Met	Val	Asn	Thr	Leu	Gly	Ile	Glu	Arg	Ala	Lys	Gly	Leu
209		50					55				60					
211	Phe	Leu	Arg	His	Gly	Tyr	Gln	Ser	Gly	Leu	Lys	Asp	Ala	Glu	Leu	Ala
212	65				70				75					80		
214	Arg	Lys	Leu	Arg	Pro	Asn	Ala	Ser	Glu	Val	Gly	Met	Phe	Leu	Ala	Gly
215					85				90					95		
217	Pro	Gln	Met	His	Ser	Leu	Lys	Gly	Leu	Val	Lys	Val	Arg	Pro	Thr	Glu
218			100					105						110		
220	Leu	Asp	Ile	Asp	Lys	Glu	Tyr	Gly	Arg	Phe	Tyr	Ala	Glu	Met	Glu	Trp
221			115					120				125				
223	Ile	Asp	Ser	Phe	Glu	Val	Glu	Ile	Cys	Gln	Thr	Asp	Leu	Gly	Gln	Met
224		130					135					140				
226	Gln	Asp	Pro	Val	Cys	Trp	Thr	Leu	Leu	Gly	Tyr	Ala	Cys	Ala	Tyr	Ser
227	145				150					155				160		
229	Ser	Ala	Phe	Met	Gly	Arg	Glu	Ile	Ile	Phe	Lys	Glu	Val	Ser	Cys	Arg
230				165				170						175		
232	Gly	Cys	Gly	Gly												
233				180												

235 &lt;210&gt; SEQ ID NO: 9

236 &lt;211&gt; LENGTH: 180

237 &lt;212&gt; TYPE: PRT

238 &lt;213&gt; ORGANISM: Pseudomonas sp. CF600

240 &lt;400&gt; SEQUENCE: 9

242 Met Pro Ile Lys Tyr Lys Pro Glu Ile Gln His Ser Asp Phe Lys Asp

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243 1          5          10          15
245 Leu Thr Asn Leu Ile His Phe Gln Ser Met Glu Gly Lys Ile Trp Leu
246          20          25          30
248 Gly Glu Gln Arg Met Leu Leu Leu Gln Phe Ser Ala Met Ala Ser Phe
249          35          40          45
251 Arg Arg Glu Met Val Asn Thr Leu Gly Ile Glu Arg Ala Lys Gly Leu
252          50          55          60
254 Phe Leu Arg His Gly Tyr Gln Ser Gly Leu Lys Asp Ala Glu Leu Ala
255 65          70          75          80
257 Arg Lys Leu Arg Pro Asn Ala Ser Glu Val Gly Met Phe Leu Ala Gly
258          85          90          95
260 Pro Gln Met His Ser Leu Lys Gly Leu Val Lys Val Arg Pro Thr Gly
261          100          105          110
263 Leu Asp Ile Asp Lys Glu Tyr Gly Arg Phe Tyr Ala Glu Met Glu Trp
264          115          120          125
266 Ile Asp Ser Phe Glu Val Glu Ile Cys Gln Thr Asp Leu Gly Gln Met
267          130          135          140
269 Gln Asp Pro Val Cys Trp Thr Leu Leu Gly Tyr Ala Cys Ala Tyr Ser
270 145          150          155          160
272 Ser Ala Phe Met Gly Arg Glu Ile Ile Phe Lys Glu Val Ser Cys Arg
273          165          170          175
275 Gly Cys Gly Gly
276          180
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279 <211> LENGTH: 180
280 <212> TYPE: PRT
281 <213> ORGANISM: Pseudomonas. sp. CF600
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286 1          5          10          15
288 Leu Thr Asn Leu Ile His Phe Gln Ser Met Glu Gly Lys Ile Trp Leu
289          20          25          30
291 Gly Glu Gln Arg Met Leu Leu Leu Gln Phe Ser Ala Met Ala Ser Phe
292          35          40          45
294 Arg Arg Glu Met Val Asn Thr Leu Gly Ile Glu Arg Ala Lys Gly Leu
295          50          55          60
297 Phe Leu Arg His Gly Tyr Gln Ser Gly Leu Lys Asp Ala Glu Leu Ala
298 65          70          75          80
300 Arg Lys Leu Arg Pro Asn Ala Ser Glu Val Gly Met Phe Leu Ala Gly
301          85          90          95
303 Pro Gln Met His Ser Leu Lys Gly Leu Val Lys Val Arg Pro Thr Glu
304          100          105          110
306 Leu Asp Ile Asp Met Glu Tyr Gly Arg Phe Tyr Ala Glu Met Glu Trp
307          115          120          125
309 Ile Asp Ser Phe Glu Val Glu Ile Cys Gln Thr Asp Leu Gly Gln Met
310          130          135          140
312 Gln Asp Pro Val Cys Trp Thr Leu Leu Gly Tyr Ala Cys Ala Tyr Ser
313 145          150          155          160
315 Ser Ala Phe Met Gly Arg Glu Ile Ile Phe Lys Glu Val Ser Cys Arg

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322 <211> LENGTH: 180
323 <212> TYPE: PRT
324 <213> ORGANISM: Pseudomonas sp. CF600
326 <400> SEQUENCE: 11
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329 1                               5                               10                               15
331 Leu Thr Asn Leu Ile His Phe Gln Ser Met Glu Gly Lys Ile Trp Leu
332                               20                               25                               30
334 Gly Glu Gln Arg Met Leu Leu Leu Gln Phe Ser Ala Met Ala Ser Phe
335                               35                               40                               45
337 Arg Arg Glu Met Val Asn Thr Leu Gly Val Glu Arg Thr Lys Gly Leu
338                               50                               55                               60
340 Phe Leu Arg His Gly Tyr Gln Ser Gly Leu Lys Asp Ala Glu Leu Ala
341 65                               70                               75                               80
343 Arg Lys Leu Arg Pro Asn Ala Ser Glu Val Gly Met Phe Leu Ala Gly
344                               85                               90                               95
346 Pro Gln Met His Ser Leu Lys Gly Leu Val Lys Val Arg Pro Thr Glu
347                               100                              105                              110
349 Leu Asp Ile Asp Lys Glu Tyr Gly Arg Phe Tyr Ala Glu Met Glu Trp
350                               115                              120                              125
352 Ile Asp Ser Phe Glu Val Glu Ile Cys Gln Thr Asp Leu Gly Gln Met
353                               130                              135                              140
355 Gln Gly Pro Val Cys Trp Thr Leu Leu Gly Tyr Ala Cys Ala Tyr Ser
356 145                              150                              155                              160
358 Ser Ala Phe Met Gly Arg Glu Ile Ile Phe Lys Glu Val Ser Cys Arg
359                               165                              170                              175
361 Gly Cys Gly Gly
362                               180
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365 <211> LENGTH: 180
366 <212> TYPE: PRT
367 <213> ORGANISM: Pseudomonas sp. CF600
369 <400> SEQUENCE: 12
371 Met Pro Ile Lys Tyr Lys Pro Glu Ile Gln His Ser Asp Phe Lys Asp
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374 Leu Thr Asn Leu Ile His Pro Gln Ser Met Glu Gly Lys Ile Trp Leu
375                               20                               25                               30
377 Gly Glu Gln Arg Met Leu Leu Leu Gln Phe Ser Ala Met Ala Ser Phe
378                               35                               40                               45
380 Arg Arg Glu Met Val Asn Thr Leu Gly Ile Glu Arg Ala Lys Gly Leu
381                               50                               55                               60
383 Phe Leu Arg His Gly Tyr Gln Ser Gly Leu Lys Asp Ala Glu Leu Ala
384 65                               70                               75                               80
386 Arg Lys Leu Arg Pro Asn Ala Ser Glu Val Gly Met Phe Leu Ala Gly
387                               85                               90                               95

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VERIFICATION SUMMARY

PATENT APPLICATION: US/09/520,538

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